

CLAIMS

1. An antibody specifically reacting with a partial peptide at the N-terminal region of a polypeptide or a salt thereof, wherein the polypeptide comprises the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11.

2. The antibody according to claim 1, which specifically reacts with a peptide comprising the 1st-13th amino acid sequence in the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11.

3. The antibody according to claim 1, which specifically reacts with a peptide comprising at least one selected from the 1st-3rd, 1st-4th, 1st-5th, 1st-6th, 1st-7th, 1st-8th, 1st-9th, 2nd-4th, 2nd-5th, 2nd-6th, 2nd-7th, 2nd-8th, 2nd-9th, 3rd-5th, 3rd-6th, 3rd-7th, 3rd-8th, 3rd-9th, 4th-6th, 4th-7th, 4th-8th, 4th-9th, 5th-7th, 5th-8th, 5th-9th, 6th-8th, 6th-9th and 7th-9th amino acid sequences in the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11.

4. The antibody according to claim 1, which does not recognize the partial peptide at the C-terminal region of a polypeptide or a salt thereof, wherein the polypeptide comprises the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11.

5. The antibody according to claim 1, which has a neutralizing activity for a peptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11.

6. The antibody according to claim 1, which is labeled.

7. The antibody according to claim 1, which is a monoclonal antibody.

8. The antibody according to claim 7, which is represented by AhW23N2G6D1a producible from a hybridoma represented by AhW23N2G6D1 (FERM BP-8363).

9. An antibody specifically reacting with a binding site of the antibody according to claim 8 to a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11.

10. The antibody according to claim 9, which has a neutralizing activity for a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11.

11. The antibody according to claim 7, which is represented by AhW23N3H3E4a producible from a hybridoma represented by AhW23N3H3E4 (FERM BP-8364).

12. An antibody specifically reacting with a binding site of the antibody according to claim 11 to a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11.

13. The antibody according to claim 12, which has a neutralizing activity for a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11.

14. An antibody specifically reacting with a partial peptide at the C-terminal region of a polypeptide or a salt thereof, wherein the polypeptide comprises the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10.

15. The antibody according to claim 14, which specifically reacts with a peptide comprising the 11th-23rd amino acid sequence in the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10.

16. The antibody according to claim 14, which specifically reacts with a peptide comprising at least one selected from the 16th-23rd, 17th-23rd, 18th-23rd, 19th-23rd, 20th-23rd, 21st-23rd, 16th-22nd, 17th-22nd, 18th-22nd, 19th-22nd, 20th-22nd, 16th-21st, 17th-21st, 18th-21st, 19th-21st, 16th-20th, 17th-20th and 18th-20th amino acid sequences in the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10.

17. The antibody according to claim 14, which does not recognize the partial peptide at the N-terminal region of a polypeptide or a salt thereof, wherein the polypeptide comprises the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10.

18. The antibody according to claim 14, which has a neutralizing activity for a peptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10.

19. The antibody according to claim 14, which is labeled.
20. The antibody according to claim 14, which is a monoclonal antibody.
21. The antibody according to claim 20, which is represented by AhW23C6G1H8a producible from a hybridoma represented by AhW23C6G1H8 (FERM BP-8365).
22. An antibody specifically reacting with a binding site of the antibody according to claim 21 to a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10.
23. The antibody according to claim 22, which has a neutralizing activity for a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10.
24. The antibody according to claim 20, which is represented by AhW23C5G2F6a producible from a hybridoma represented by AhW23C5G2F6 (FERM BP-8366).
25. An antibody specifically reacting with a binding site of the antibody according to claim 24 to a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10.
26. The antibody according to claim 25, which has a neutralizing activity for a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10.
27. An antibody specifically reacting with a partial peptide at the C-terminal region of a polypeptide or a salt thereof, wherein the polypeptide comprises the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11.
28. The antibody according to claim 27, which specifically reacts with a peptide comprising the 16th-30th amino acid sequence in the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11.
29. The antibody according to claim 27, which specifically reacts with a peptide comprising at least one selected from the 23rd-30th, 24th-30th, 25th-30th, 26th-30th, 27th-30th, 28th-30th, 23rd-29th, 24th-29th, 25th-29th, 26th-29th, 27th-29th, 23rd-28th, 24th-28th, 25th-28th, 26th-28th, 23rd-27th, 24th-27th and 25th-27th amino acid sequences in the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11.
30. The antibody according to claim 27, which does not recognize the partial peptide at the N-terminal region of a polypeptide or a salt thereof, wherein the

polypeptide comprises the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11.

31. The antibody according to claim 27, which has a neutralizing activity for a peptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11.

32. The antibody according to claim 27, which is labeled.

33. The antibody according to claim 27, which is a monoclonal antibody.

34. The antibody according to claim 33, which is represented by ArW30C3A1Aa producible from a hybridoma represented by ArW30C3A1A (FERM BP-8367).

35. An antibody specifically reacting with a binding site of the antibody according to claim 34 to a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11.

36. The antibody according to claim 35, which has a neutralizing activity for a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11.

37. The antibody according to claim 33, which is represented by ArW30C7F2E8a producible from a hybridoma represented by ArW30C7F2E8 (FERM BP-8368).

38. An antibody specifically reacting with a binding site of the antibody according to claim 37 to a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11.

39. The antibody according to claim 38, which has a neutralizing activity for a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11.

40. A pharmaceutical comprising the antibody according to claim 1, 14 or 27.

41. The pharmaceutical according to claim 40, which is an agent for preventing/treating sterility, renal dropsy, peptic ulcer or hyperchlorhydria.

42. A diagnostic agent comprising the antibody according to claim 1, 14 and/or 27.

43. A method of quantifying a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11, or a salt thereof, which comprises using the antibody according to claim 1.

44. The quantifying method according to claim 43, which comprises further using the antibody according to claim 14 or 27.

45. A method of quantifying a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10, or a salt thereof, which comprises using the antibody according to claim 14.

46. A method of quantifying a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11, or a salt thereof, which comprises using the antibody according to claim 27.

47. A method of quantifying a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11, or a salt thereof, in a test fluid, which comprises competitively reacting the antibody according to claim 1 with a test fluid and a labeled form of a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11, or a salt thereof, and determining a ratio of the labeled polypeptide or a salt thereof bound to the antibody.

48. A method of quantifying a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10, or a salt thereof, in a test fluid, which comprises competitively reacting the antibody according to claim 14 with a test fluid and a labeled form of a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10, or a salt thereof, and determining a ratio of the labeled polypeptide or a salt thereof bound to the antibody.

49. A method of quantifying a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11, or a salt thereof, in a test fluid, which comprises competitively reacting the antibody according to claim 27 with a test fluid and a labeled form of a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11, or a salt thereof, and determining a ratio of the labeled polypeptide or a salt thereof bound to the antibody.

50. A method of quantifying a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10, or a salt thereof, in a test fluid, which comprises (1) reacting the antibody according to claim 1 immobilized on a carrier, a labeled form of the antibody

according to claim 14 and a test fluid, followed by measuring the activity of the label, or (2) reacting the antibody according to claim 14 immobilized on a carrier, a labeled form of the antibody according to claim 1 and a test fluid, followed by measuring the activity of the label.

51. A method of quantifying a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11, or a salt thereof, in a test fluid, which comprises (1) reacting the antibody according to claim 1 immobilized on a carrier, a labeled form of the antibody according to claim 27 and a test fluid, followed by measuring the activity of the label, or (2) reacting the antibody according to claim 27 immobilized on a carrier with a labeled form of the antibody according to claim 1 and a test fluid, followed by measuring the activity of the label.

52. A method for diagnosis of a disease associated with a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 or SEQ ID NO: 11, or a salt thereof, which comprises using the antibody according to claim 1.

53. The method for diagnosis according to claim 52, which comprises further using the antibody according to claim 14 or 27.

54. A method for diagnosis of a disease associated with a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8 or SEQ ID NO: 10, or a salt thereof, which comprises using the antibody according to claim 14.

55. A method for diagnosis of a disease associated with a polypeptide comprising the amino acid sequence represented by SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9 or SEQ ID NO: 11, or a salt thereof, which comprises using the antibody according to claim 27.

56. The method for diagnosis according to claims 52 through 55, wherein the diseases is sterility, renal dropsy, peptic ulcer or hyperchlorhydria.

57. A hybridoma producing the antibody according to claim 7.

58. The hybridoma according to claim 57, which is represented by AhW23N2G6D1 (FERM BP-8363) or AhW23N3H3E4 (FERM BP-8364).

59. A method of producing the antibody according to claim 7, which comprises culturing the hybridoma according to claim 58 in vivo or in vitro and collecting the antibody according to claim 7 from the body fluid or culture.

60. A hybridoma producing the antibody according to claim 20.

61. The hybridoma according to claim 60, which is represented by AhW23C6G1H8 (FERM BP-8365) or AhW23C5G2F6 (FERM BP-8366).

62. A method of producing the antibody according to claim 20, which comprises culturing the hybridoma according to claim 61 in vivo or in vitro and collecting the antibody according to claim 20 from the body fluid or culture.

63. A hybridoma producing the antibody according to claim 33.

64. The hybridoma according to claim 63, which is represented by ArW30C3A1A (FERM BP-8367) or ArW30C7F2E8 (FERM BP-8368).

65. A method of producing the antibody according to claim 33, which comprises culturing the hybridoma according to claim 64 in vivo or in vitro and collecting the monoclonal antibody according to claim 33 from the body fluid or culture.

66. A method of preventing/treating sterility, renal dropsy, peptic ulcer or hyperchlorhydria, which comprises administering to a mammal an effective dose of the antibody according to claim 1, 14 or 27.

67. Use of the antibody according to claim 1, 14 or 27 to manufacture an agent for preventing/treating sterility, renal dropsy, peptic ulcer or hyperchlorhydria.